

Estimation of Sequential Search Models with Endogeneity

Jiarui Liu

New York University Stern School of Business

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Abstract

Sequential search models, like standard consumer choice models, often suffer from endogeneity because some observed product attributes can be correlated with unobserved quality. Addressing endogeneity in the estimation of sequential search models has been a long-standing challenge. This paper proposes and proves consistency of a pairwise maximum rank (PMR) estimator, which recovers consumer preferences, search costs, and the unobserved product in sequential search models with endogenous attributes. Simulations show that PMR can recover the true parameters, while ignoring endogeneity leads to large biases. Applying PMR to Expedia hotel search data uncovers significant price and position endogeneity and shows that failing to correct for it leads to different rankings and counterfactual predictions. Overall, PMR provides a scalable, practical and flexible toolkit for empirical research on consumer search.

Track: Methods, Modelling & Marketing Analytics